## University Core and Graduation Requirements

### University Core Requirements:

<table>
<thead>
<tr>
<th>Requirements</th>
<th>#Classes</th>
<th>Hours</th>
<th>Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Religion Cornerstones</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
<td>1</td>
<td>2.0</td>
<td>REL A 275</td>
</tr>
<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
<td>1</td>
<td>2.0</td>
<td>REL A 250</td>
</tr>
<tr>
<td>Foundations of the Restoration</td>
<td>1</td>
<td>2.0</td>
<td>REL C 225</td>
</tr>
<tr>
<td>The Eternal Family</td>
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<td>2.0</td>
<td>REL C 200</td>
</tr>
<tr>
<td><strong>The Individual and Society</strong></td>
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<td></td>
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</tr>
<tr>
<td>American Heritage</td>
<td>1-2</td>
<td>3-6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Global and Cultural Awareness</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td></td>
<td></td>
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<tr>
<td>First Year Writing</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Advanced Written and Oral Communications</td>
<td>1</td>
<td>3.0</td>
<td>ENGL 316 recommended</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>1</td>
<td>4.0</td>
<td>MATH 112*</td>
</tr>
<tr>
<td>Languages of Learning (Math or Language)</td>
<td>1</td>
<td>4.0</td>
<td>MATH 112*</td>
</tr>
<tr>
<td><strong>Arts, Letters, and Sciences</strong></td>
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</tr>
<tr>
<td>Civilization 1</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Civilization 2</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Arts</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Letters</td>
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<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Biological Science</td>
<td>1</td>
<td>3.0</td>
<td>PDBIO 120*</td>
</tr>
<tr>
<td>Physical Science</td>
<td>1</td>
<td>3.0</td>
<td>CHEM 105*, PHSCS 105* or 121*</td>
</tr>
<tr>
<td>Social Science</td>
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<td>3.0</td>
<td>from approved list</td>
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<tr>
<td><strong>Core Enrichment: Electives</strong></td>
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<td></td>
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<tr>
<td>Religion Electives</td>
<td>3-4</td>
<td>6.0</td>
<td>from approved list</td>
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<tr>
<td>Open Electives</td>
<td>Variable</td>
<td>Variable</td>
<td>personal choice</td>
</tr>
</tbody>
</table>

FOR GE QUESTIONS CONTACT THE ADVISEMENT CENTER — FOR PROGRAM QUESTIONS SEE YOUR FACULTY ADVISOR

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (12 hours overlap)

### Graduation Requirements:

- Minimum residence hours required: 30.0
- Minimum hours needed to graduate: 120.0

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### Suggested Sequence of Courses

#### FRESHMAN YEAR

**1st Semester**
- First-year Writing or American Heritage: 3.0
- PDBIO 120: 3.0
- CHEM 105: 4.0
- Religion Cornerstone course: 2.0
- MATH 112 (Lang. of Learning or Quant. Reasoning): 4.0
- **Total Hours:** 16.0

**2nd Semester**
- First-year Writing or American Heritage: 3.0
- MATH 113: 4.0
- CHEM 106: 3.0
- CHEM 107: 1.0
- Religion Cornerstone course: 2.0
- Arts or Letters elective: 3.0
- **Total Hours:** 16.0

#### SOPHOMORE YEAR

**3rd Semester**
- MMBIO 240: 3.0
- MMBIO 241: 1.0
- Civilization 1 elective: 3.0
- CHEM 351: 3.0
- PHSCS 121: 3.0
- Religion cornerstone course: 2.0
- **Total Hours:** 15.0

**4th Semester**
- PWS 340: 3.0
- CHEM 352: 3.0
- CHEM 353: 1.0
- Civilization 2 elective: 3.0
- PHSCS 123: 3.0
- Religion cornerstone course: 2.0
- Mentored Lab Experience: 1-2.0
- **Total Hours:** 16-17.0

#### JUNIOR YEAR

**5th Semester**
- Religion elective: 2.0
- **Total Hours:** 16-17.0

**6th Semester**
- Religion elective: 2.0
- **Total Hours:** 15-16.0

#### SENIOR YEAR

**7th Semester**
- Religion elective: 2.0
- **Total Hours:** 15-16.0

**8th Semester**
- Religious Elective: 2.0
- **Total Hours:** 14-14.5

**Note:** The Senior Survey and Exit Interview must be completed during the last semester. You will be contacted during the graduation clearance process.

**Note:** This degree program requires a minimum of 120.0 hours for graduation. Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.
## BS in Biophysics (285720)

### 2017-2018 Program Requirements (70.5 Credit Hours)

### REQUIREMENT 1: Complete 6 courses

**LIFE SCIENCES CORE COURSES:**
- BIOC 420 - Evolutionary Biology
- MMBO 240 - Molecular Biology
- MMBO 241 - Molecular and Cellular Biology Laboratory
- *PDBIO 120 - Science of Biology
- PDBIO 360 - Cell Biology
- PWS 340 - Genetics

### REQUIREMENT 2: Complete 8 courses

**CHEMISTRY COURSES:**
- *CHEM 105 - General College Chemistry 1 with Lab (Integrated)
- CHEM 106 - General College Chemistry 2
- CHEM 107 - General College Chemistry Laboratory
- CHEM 351 - Organic Chemistry 1
- CHEM 352 - Organic Chemistry 2
- CHEM 353 - Organic Chemistry Laboratory--Nonmajors
- CHEM 468 - Biophysical Chemistry
- CHEM 481 - Biochemistry

### REQUIREMENT 3: Complete 6 courses

**MATH AND PHYSICS COURSES:**
- MATH 112 - Calculus 1
- MATH 113 - Calculus 2
- PHSCS 123 - Introduction to Waves, Optics, and Thermodynamics
- PHSCS 140 - Electronics Lab
- PHSCS 220 - Introduction to Electricity and Magnetism

### REQUIREMENT 4: Complete 4 courses

**MAJOR CORE COURSES:**
- PDBIO 362 - Advanced Physiology
- PDBIO 363 - Advanced Physiology Laboratory
- PDBIO 455R - Physiology and Developmental Biology Seminar
- PDBIO 568 - Cellular Electrophysiology and Biophysics

### REQUIREMENT 5: Complete 11.0 hours from the following option(s)

**COMPLETE 11 HOURS FROM THE FOLLOWING. AT LEAST 4 HOURS MUST COME FROM THE MENTORED EXPERIENCE AND AT LEAST 5 HOURS FROM ELECTIVES.

**OPTION 5.1:** Complete up to 6.0 hours from the following course(s)

### A. MENTORED LABORATORY EXPERIENCE (MUST BE IN AN APPROVED BIOPHYSICS LAB) (AT LEAST 4 HOURS REQUIRED):

### THE DISCIPLINE:

Biophysics is the use of physics, chemistry, mathematics, and biology to investigate the physical basis of life. Upper-division courses require synthesis and integration of information from many areas of science to allow understanding of such processes as protein folding, function of ion channels, and how the nervous system works.

### CAREER OPPORTUNITIES:

A major in biophysics prepares students to pursue advanced degrees in the biological sciences. This major also provides outstanding preparation for students seeking admittance into professional programs. Graduates of this program will also have the academic and laboratory skills necessary for direct employment in medical, biotechnological, and pharmaceutical industries. Biophysicists whose primary interest is research often work in government agencies, such as the National Institutes of Health, NASA, and the Departments of Agriculture or Defense. Many new positions have been created in industry as a result of recent developments in molecular biophysics and molecular biology. Regardless of the setting, biophysicists generally work in groups with people with different backgrounds, interests, and abilities who collaborate to solve common problems.

### RESEARCH OPPORTUNITIES:

Students majoring in biophysics have the opportunity to become involved in laboratory research with the faculty. Funding for this research comes from such sources as the National Institutes of Health, and National Science Foundation. Research topics such as the following are being investigated:

- Molecular modeling and regulation of voltage-gated ion channels.
- Biophysics of membrane structure and function.
- Molecular and functional characterization of ligand-gated ion channels in the central nervous system.
- Molecular mechanisms of neurotransmitter release.

### MENTORED EXPERIENCE:

This involves working closely with a faculty member doing research in biophysics (PDBio 494R and 495R).

### FINANCING:

Various private, federal, and university sources of scholarships, fellowships, and grants are available. Advanced undergraduates may be hired to teach labs or help sections for PDBio courses.
HONORARY SOCIETIES AND CLUBS:
Membership in the Premedical or Predental Clubs, as well as service on the Student Council of the College of Life Sciences, promotes fellowship among students and develops professionalism.

MAP DISCLAIMER
While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

DEPARTMENT INFORMATION
Department of Physiology and Developmental Biology
Brigham Young University
4005 Life Sciences Building
Provo, UT 84602
Telephone: (801) 422-2006

ADVISEMENT CENTER INFORMATION
Life Science Student Services
Brigham Young University
2060 Life Sciences Building
Provo, UT 84602
Telephone: (801) 422-3042
lifesciences@byu.edu